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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,754	02/25/2004	Tsuyoshi Okutani	848075/0067	3009
29619 7590 08/30/2007 SCHULTE ROTH & ZABEL LLP ATTN: JOEL E. LUTZKER 919 THIRD AVENUE NEW YORK, NY 10022			EXAMINER WANG, KENT F	
			ART UNIT 2622	PAPER NUMBER
			MAIL DATE 08/30/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/786,754

Applicant(s)

OKUTANI ET AL.

Examiner

Kent Wang

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

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- 1) ☒ Responsive to communication(s) filed on 30 July, 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2004 and 21 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

- are*
1. Claims 1-10^A withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to the nonelected claims, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on June 25, 2007.

Priority

2. Receipt is acknowledged of paper submitted under 35 U.S.C. 119(a)-(d), which paper has been placed of record in the file.

Information Disclosure Statement

3. The references listed on the information disclosure statement (IDS) submitted on 08/09/2004, 08/08/2006, 08/28/2006, and 02/05/2007 have been considered by the examiner (see attached PTO 1449).

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
5. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of

which applicant may become aware in the specification. The table below shows just a few of the many minor errors through the specification:

Page no	Line no	Mislabeled character	Corrected character
48	14	Fig. 31	Fig. 29
63	11	cam for zooming 25	cam for zooming 17
70	3	Fig. 20 is a Fig. 20 is a	Fig. 20 is a
70	23	the second lens groups	the first and second lens groups
71	12	22 ca be prevented	22 can be prevented

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Filipovich, US 3,744,884.

Regarding claim 11, Filipovich discloses a cam apparatus (a lens mount assembly 10, Fig 2) having first and second spiral cam grooves (cam track 44, 68, Fig 1) for moving an object (sleeve 90, Fig 2) with a cam-driving force which is generated by cam-driving a cam groove inserting member inserted in each cam groove (cam track 44, 68, Fig 1), a cam apparatus comprising:

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- a cam base body (a carrier body 50, Fig 1) in which sliding portions having a smaller diameter than that of a middle portion of a cylinder are formed at both ends of the cylinder (slightly less than the internal diameter of the barrel formed by the barrel portions), an approximately vertical plane (cam surface portions 20, Fig 1) of a stepped portion between one sliding portion (first barrel portion 16) and the middle portion of the cylinder (second barrel portion 24) is defined as one cam plane of the first cam groove (cam track 44) and an approximately vertical plane (cam surface portions 40, Fig 1) of a stepped portion between the other sliding portion (second barrel portion 24) and the middle portion of the cylinder (first barrel portion 16) is defined as one cam plane of the second cam groove (cam track 68) (col. 2, lines 12-68);
- a first cam frame (first barrel portion 16) having another cam plane (abutments 22, Fig 1) confronting the one cam plane (cam surface portions 20) of the first cam groove (cam track 44) and provided non-rotatably so as to be able to slide on one sliding portion (axial sliding movement) (col. 2, lines 12-49);
- a second cam frame (second barrel portion 24) having another cam plane (spacer members 36, Fig 1) confronting the one cam plane (cam surface portions 40) of the second cam groove (cam track 68) and provided on the other sliding portion non-rotatably so as to be able to slide (axial sliding movement) (col. 2, lines 12-68);

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- and a forcing device (a sleeve 90, Fig 2) which contacts a cam groove inserting member which is inserted to the cam groove (cam tracks 44, 68) formed by the first and the second cam frames (barrel portion 16, 24) and the cam base body (carrier body 50) on to the cam plane (cam surface portions 20, 40) by pressing the first and the second cam frames (barrel portion 16, 24) (col. 2, line 12 to col. 3 line 14).

Regarding claim 12, Filipovich discloses an adjusting mechanism (a sleeve 90, Fig 2) which adjusts a distance between the one side planes (cam surface portion 20) of the first and the second cam grooves (cam tracks 44, 68) (col. 3, lines 1-54).

Regarding claim 13, Filipovich discloses a slope (the spacing of the cam tracks formed, col. 4, lines 3-8) is provided on at least one cam plane (abutment 22, Fig 1) of the one cam plane (first cam surface portion 20, Fig 1) and the other cam plane (second cam surface portion 40, Fig 1), the slope (the spacing of the cam tracks formed) is a slope which gives a cam driving force along a direction of the rotational axis of the cam groove and pushing force along a direction orthogonal to the direction of the rotational axis of the cam groove to the cam groove inserting member (carrier body has a length sufficient to prevent tilting and misalignment of the cell in the barrel portions while permitting rotational and axis sliding movement of the cell) (col. 2, lines 35-49 and col. 3, line 54 to col. 4, line 8).

Regarding claim 14, Filipovich discloses a forcing device (a sleeve 90, Fig 2) for fastening to tighten one end of the forcing device to the first cam frame (first barrel portion 16, Fig 1) and another end to the second cam frame (second barrel portion 24, Fig

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1) and a forcing device for pressing the first and the second cam frame (barrel portions 16, 24) to the cam base body (carrier body 50, Fig 1) along one direction (axial sliding movement) (col. 2, lines 12-68).

8. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Yamazaki, US 4,993,815.

As for claim 15, Yamazaki disclosed optical zoom mechanism (a zoom lens assembly, Fig 1) comprising:

- a zoom lens (zoom lens, col. 3, lines 29-40, Yamazaki);
- a holding frame which holds the zoom lens (a stationary frame 2, Fig 1, Yamazaki);
- a rotational axis rod (optical axis O) having gears (zooming transmission gear 1b, Fig 1) at the both end thereof (col. 3, lines 41-54, Yamazaki);
- a first group of rate reducing gears (zooming transmission gear 1b, Fig 1) which engage the gear at one end of the rotational axis rod (col. 3, lines 41-54, Yamazaki);
- a second group of rate reducing gears (focusing shaft 34) which engage the gear at another end of the rotational axis rod (col. 7, lines 22-34, Yamazaki);
- a motor (a zooming motor, col. 3, lines 41-54, Yamazaki) which drives the second group of rate reducing gear (col. 3, lines 41-54, Yamazaki);

- and a cam body driven by the first rate reducing gears gear (a zooming motor driving unit provided at the midpoint of the outer periphery of the cylinder; col. 3, lines 41-54, Yamazaki),
- wherein the zoom lens (the lens assembly) is driven by inserting a cam groove inserting member (driving pins 4a, Fig 2) provided on the holding frame into a spiral cam groove (cam groove 2a, Fig 2) of the cam body, the cam body comprises one cam body which forms one cam plane (front cam face 4b, Fig 2) and another cam body which forms another cam plane (cam abutment 6b, Fig 2), which is provided non-rotatably (slidably fitted) so as to be able to slide and which forms another cam plane (cam abutment 6b) confronting the one cam plane (front cam face 4b), and the cam body further comprises a forcing device (differential cam 4, Fig 2) which contact the cam groove inserting member to the cam plane (front cam face 4b) by pressing one cam body and/or another cam body, whereby zooming is performed by moving the holding frame with the cam body (col. 3, lines 29-54, col. 4, lines 12-57, and col. 5, lines 9-50, Yamazaki).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 16 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamazaki (US 4,993,815) in view of Filipovich (US 3,744,884).

As for claim 16, the limitations of claim 15 are taught above, Yamazaki does not explicitly disclose a cam body comprises a cam base body having two spiral grooves, two cam planes, and two cam frames which provided non-rotatably so as to be able to slide on the other sliding portion.

Filipovich disclosed a cam body of the optical zoom mechanism comprising:

- a cam base body having a first spiral cam groove (cam track 44, Fig 1), a second spiral cam groove (cam track 68, Fig 1), a sliding portion (a carrier body 50, Fig 1) having a smaller diameter at both ends of a cylinder, one cam plane (cam surface portions 20, Fig 1) of the first cam groove (cam track 44) which is provided at a stepped portion between one sliding portion (first barrel portion 16, Fig 1) and the middle portion (second barrel portion 24, Fig 1) of the cylinder, and one cam plane of the second cam groove (cam track 68) which is provided at a stepped portion between another sliding portion (second barrel portion 24) and the middle portion (first barrel portion 16) of the cylinder (col. 2, lines 12-68, Filipovich);
- another cam plane (abutments 22, Fig 1) confronting the one cam plane (cam surface portions 20) of the first cam groove (cam track 44) (col. 2, lines 12-34, Filipovich);

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- a first cam frame (first barrel portion 16) provided non-rotatably so as to be able to slide on the one sliding portion (a carrier body 50, Fig 1) (col. 2, lines 12-34, Filipovich);
- another cam plane (spacer members 36, Fig 1) confronting the one cam plane (cam surface portions 40) of the second cam groove (cam track 68) (col. 2, lines 12-34, Filipovich);
- a second cam frame (second barrel portion 24) provided non-rotatably so as to be able to slide on the other sliding portion (a carrier body 50, Fig 1) (col. 2, lines 12-34, Filipovich); and further
- a forcing device (a sleeve 90, Fig 2) which contact a cam groove inserting member (cell drive stud 56, Fig 1) to the cam plane by pressing the first cam frame (first barrel portion 16) and the second cam frame (second barrel portion 24), the cam groove inserting member (cell drive stud 56) inserted into two cam grooves (cam tracks 44, 68) which formed with the first cam frame (first barrel portion 16), the second cam frame (second barrel portion 24) and the cam base body (a carrier body 50) (col. 2, lines 35-50, Filipovich).

It would have been obvious to a person of the ordinary skill in the art to combine Filipovich and Yamazaki's lens mount assembly to achieve the claimed invention. As disclosed in Filipovich reference, the motivation for the combination would be to provide a relatively simple, inexpensive mount assembly for adjustably supporting components of a variable magnification zoom unit (col. 1, lines 4-10, Filipovich).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Chan (US 5,268,794) discloses a zoom lens assembly that is simple, compact, accurate and easy to manufacture and to assemble wherein complex motions of parts are minimized and expensive machined parts and to provide a zoom lens assembly that overcomes disadvantages of assemblies used in the past.
- Lemke (US 4,934,789) discloses a lens barrel which is guided in a support bearing in the direction of the optical axis and is provided with indentations which run parallel to said optical axis and with which the pins engage.
- Atsuta et al. (US 4,834,514) discloses a novel and improved zoom lens mount assembly in which the innermost layer is constructed from a plurality of frames into a single-layered structure and thereby an inner diameter of the lens mount assembly is dimensioned as largely as possible without making the lens mount assembly as a whole bulky.
- Oda et al. (US 5,037,187) discloses a zoom lens mount assembly in which a zooming cam frame is moved along the optical axis while rotating therearound and respective movable frames supporting an optical system are driven by such rotation and movement of the cam frame to effect a desired zooming.
- Nomura (US 2001/0017662) discloses a lens frames that are moved in the direction of the optical axis, without rotating about the optical axis, to change a focal length of said zoom lens via rotation of said cam barrel.


Inquiries

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kent Wang whose telephone number is 571-270-1703. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-270-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KW
29 August 2007


NGOC-YEN VU
SUPERVISORY PATENT EXAMINER